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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/823,827

04/14/2004

Alan P. Cohen

107117

5636

23490

7590

04/02/2007

HONEYWELL INTELLECTUAL PROPERTY INC  
PATENT SERVICES  
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EXAMINER

HOPKINS, ROBERT A

ART UNIT

PAPER NUMBER

1724

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

04/02/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/823,827	<b>Applicant(s)</b> COHEN ET AL.	
	<b>Examiner</b> Robert A. Hopkins	<b>Art Unit</b> 1724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☐ Claim(s) 1,3-6 and 8-14 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3,8 and 11-14 is/are allowed.
- 6) ☒ Claim(s) 1,4-6,9 and 10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>2-20-07</u> | 6) <input type="checkbox"/> Other: ____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

Claims 1,4-6,9, and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 6 recite "said heated air" There is a lack of antecedent basis for "said heated air" in previous claim limitations . Correction is requested. Claims 4 and 5 depend on claim 1 and hence are also rejected. Claims 9 and 10 depend on claim 6 and hence are also rejected.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1,4, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinnage et al(6557365) taken together with Klobucar(6294000).

Dinnage et al teaches an air system comprising a source of fresh air communicating with a desiccant wheel(60), wherein the desiccant wheel comprises an axis of rotation, a radius perpendicular to the axis of rotation extending from the axis of rotation to an outer circumference, and two sides, and wherein the two sides are divided into at least two sectors, and wherein the sectors comprises at least an adsorption sector and a regeneration sector, wherein the fresh air passes through the adsorption

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sector to be dried, and wherein the air system comprises an air compressor(50) wherein the dried fresh air is compressed to a desired level, and a source of heated gas(E) sent to the regeneration sector wherein water is removed from the desiccant wheel.

Dinnage et al is silent as to wherein the desiccant wheel further comprises a cooling sector, wherein a flow of air that is cooler than the heated air is in communication with the cooling sector. Klobucar teaches an air system including a desiccant wheel having a source of fresh air communicating with the desiccant wheel and through an adsorption sector, a cooling sector, wherein a flow of air that is cooler than heated air is in communication with the cooling sector, and a desorption sector, wherein a source of heated gas is sent to the desorption sector. It would have been obvious to someone of ordinary skill in the art at the time of the invention to provide a cooling sector for the desiccant wheel of Dinnage et al in order to reduce the volume of heated adsorption gas required(column 3 lines 15-17 of Klobucar).

Dinnage et al further teaches wherein water from the air flow is removed by a condenser prior to removal by the desiccant wheel. Klocubar further teaches wherein a portion of the dried air is diverted to cool a cooling sector of the desiccant wheel(figure 6).

Claims 6,9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dinnage et al(6557365) taken together with Klobucar(6294000).

Dinnage et al teaches an air dryer comprising a desiccant wheel comprising an axis of rotation, a radius perpendicular to the axis of rotation extending from the axis of rotation to an outer circumference, and two faces, wherein the two faces are each

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divided into at least two sectors, the sectors comprising an adsorption sector and a regeneration sector, wherein the adsorption sector is contacted with a moist flow of air that passes through the adsorption sector in a direction parallel to the axis of rotation, wherein the adsorption sector comprises an adsorbent material to remove water from the air to produce dry air and a source of heated air in communication with the regeneration sector to remove water from the regeneration sector of the desiccant wheel, wherein the dry air passes to an air compressor that compresses the dry air to a desired pressure level. Dinnage et al is silent as to wherein the desiccant wheel further comprises a cooling sector, wherein a flow of air that is cooler than a heater air is in communication with the cooling sector. Klobucar teaches an air system including a desiccant wheel having a source of fresh air communicating with the desiccant wheel and through an adsorption sector, a cooling sector, wherein a flow of air that is cooler than heated air is in communication with the cooling sector, and a desorption sector, wherein a source of heated gas is sent to the desorption sector. It would have been obvious to someone of ordinary skill in the art at the time of the invention to provide a cooling sector for the desiccant wheel of Dinnage et al in order to reduce the volume of heated adsorption gas required(column 3 lines 15-17 of Klobucar).

Dinnage et al further teaches wherein water from the air flow is removed by a condenser prior to removal by the desiccant wheel. Klocubar further teaches wherein a portion of the dried air is diverted to cool a cooling sector of the desiccant wheel (figure 6).

***Allowable Subject Matter***

Claims 3,8, and 11-14 allowed.

Claims 3,8, and 11 include subject matter which was indicated as allowable in a previous office action. Claims 12-14 depend on claim 11 and hence are also allowed.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert A. Hopkins whose telephone number is 571-272-1159. The examiner can normally be reached on Monday-Thursday, 7:30am-5pm, every Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Rah  
March 8, 2007

  
ROBERT HOPKINS  
PRIMARY EXAMINER  
A-41224